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SOME OF THE BEST SWEET CHERRIES.

BY F. R. ELLIOTT.

Since the publication of my remarks on "Cherries for the West," in the Horticulturist for October, 1867, I have received many letters asking for a selection of sweet cherries most desirable for family use as well as for market.

Quite a number of correspondents in the New England States speak of a want of attention of late years to the planting out of cherries, saying "the people seem to depend on the large old trees which are apparently fast going to decay; and as you know, most of them are of the old Black Heart, American Heart, Chinese Heart, etc., varieties, it follows that few comparatively know of the better sorts which have originated and been introduced to cultivation during the past quarter of a century."

How true this remark of my correspondent may be I can not say; but in traveling through parts of the Eastern States this past winter, it did appear to me there was less attention given to tree planting than should be among so intelligent a people as comprise the great body of the New England States. Fruit-growing has its difficulties everywhere, and from my experience in former years in New England, and observation of the West, I confess an impression that the same amount of care and attention to the subject will produce more certain returns and successful results in fruit-growing throughout most of New England than in the States of Illinois and Indiana.

And when the nearness to the great markets is considered, and the extra price obtained for fruit computed, it is surprising that land-owners will continue to dig out and blast rocks, and plow up and down steep hills, with stones rolling about so that they have to jump for fear of having their ankles broken, just to grow a little Indian corn or a patch of rye, because their father and grandfather did so many years ago.

The cherry, it is true, is a fruit that quickly decays, and must be gathered and marketed as soon as ripe; but the construction of fruit-houses and the process of canning have come in to readily absorb any surplus amount that may be sent to market; and among the whole list of fruits I know none more reliable for a crop, or more rapidly and permanently to return an interest for the capital and labor invested.

During the first six or eight years a cherry orchard may be cropped with raspberries, currants, etc., and almost invariably trees at six years from planting out will yield a crop that will readily command from five to ten dollars, so that with trees at twenty feet apart, an acre will pay from five hundred to one thousand dollars a year; and each year as the orchard increases in size, the product and income will increase.

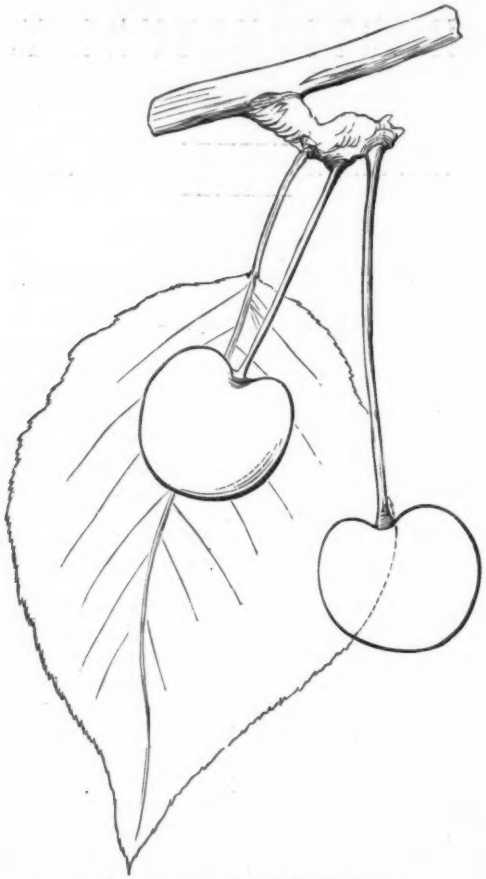

FIG. 53.—*Early Purple Guigne.*

The cherry may be grown in almost any soil, provided it is well drained. A soil of moderate fertility, light and porous, serves to suit it best; and there are many rocky knolls in the New England States now useless, except as pleasant features in scenery, where the cherry could be grown with great success; in fact, in rambling over the hills and rocks of Connecticut, I have often found the Mahaleb and Mazzard

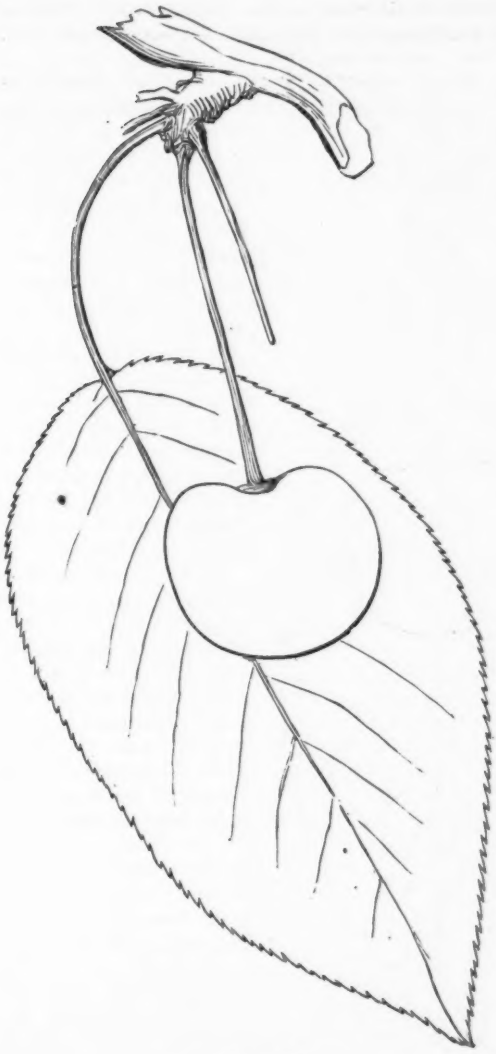

FIG. 54.—*Rockport.*

growing healthily, the seed undoubtedly having been dropped by birds.

The use of the Mazzard or Mahaleb cherry for stock on which to work, or for the future success of the tree, is a matter of comparatively little account to the orchardist, except in regulating the distance apart to plant. The young tree grows just as

rapidly the first five or six years on the Mahaleb as on the Mazzard, but it does not ultimately make as large a tree; and hence if the varieties are worked on the Mahaleb stock, it would do to plant them fifteen feet apart each way.

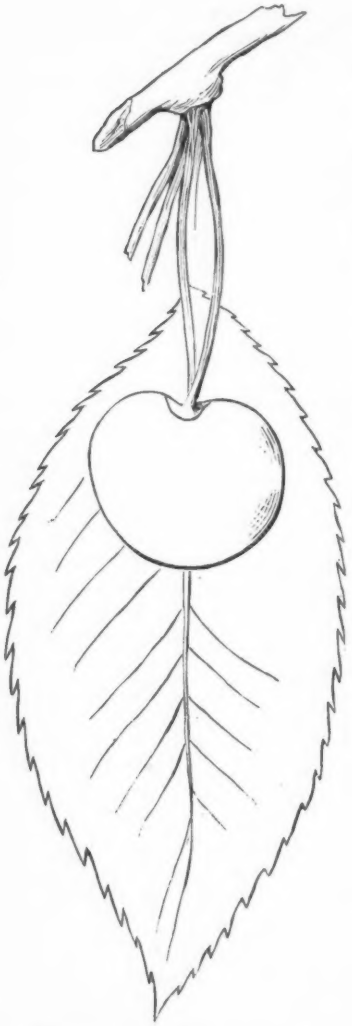

FIG. 55.—*Knight's Early Black.*

VARIETIES.

Selecting out of the many a few of the very best in all respects for table and market of fruit, and for growth, health, hardihood, and bearing of tree, is a difficult task; but, as just now is the cherry season, my list may be compared with varieties not named; and if any one has a better than here named, I hope he will report it, at least to me, if not to the public.

EARLY PURPLE GUIGNE.—Although a straggling, crooked grower while young, this variety makes a fine, open orchard tree; and as it ripens the very earliest, and is good for the table, and commands ready sale, I place it as one of the most desirable sorts for the orchard or private garden. The fruit is of medium size, purplish black, juicy, sweet, half tender, and very good.

ROCKPORT.—If I were to select but one variety out of this class of cherries it would be the Rockport. In habit of tree it is very upright and vigorous, bears young and abundantly a cherry of the largest size, of a rich amber yellow mostly overshaded and mottled and blotched with rich shades of red. The flesh is juicy, sweet, rich, delicious, half tender. In ripening, it almost immediately follows the Early Purple Guigne.

COE'S TRANSPARENT.—I have often been in doubt which to choose, whether this, Delicate, Caroline, or Hoadley; but as Coe's Transparent is more generally tested, it is perhaps safest to advise it. Delicate and Caroline, however, surpass it in real delicacy for the table, while Hoadley is almost its counterpart. The tree is rather spreading, round-headed in habit, of moderately rapid growth, comes early to maturity, and bears abundantly a fruit of medium size, light amber yellow, beautifully mottled with bright clear red, juicy, sweet, tender, rich, and delicious.

KNIGHT'S EARLY BLACK.—For private

gardens or sheltered localities this is one of the most desirable varieties, as its fruit matures early and is of the highest excellence; but the tree is a little tender, and unless it can be grown so as to be somewhat protected, it is liable to die out. In habit it is short-jointed, and makes a tree of only medium size. The fruit is large, black, juicy, half tender, very rich and sweet, and fine flavored.

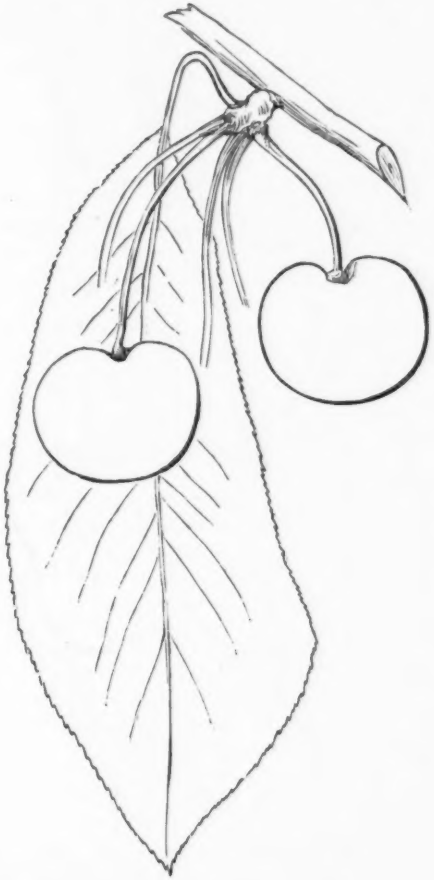

FIG. 56.—*Governor Wood.*

PONTIAC.—Taken all in all for hardihood of tree, vigorous, upright, spreading habit, early in coming to maturity, abundant bearing, large size and good quality of fruit, with fineness for market, this is perhaps the best of the black cherries. In real richness of quality it is not perhaps equal to Knight's Early Black or Black

Hawk, but its other good qualities abound, and make it a superior sort for family or market use.

GOVERNOR WOOD.—This variety has probably had a more general and widespread reputation than any one among Prof. Kirtland's Seedlings. It is a little too much inclined to overbear, and thus lessen the size of the fruit, unless the tree is in rich soil; but its quality is unsurpassed,

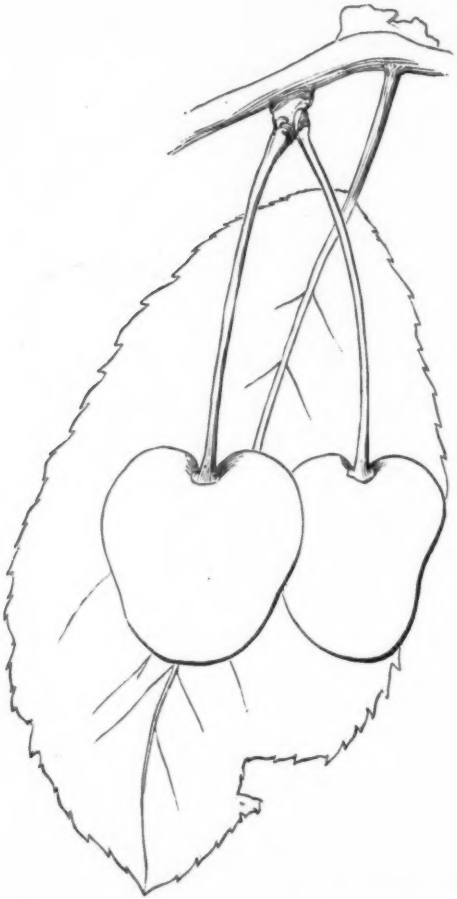

FIG. 57.—*Monstreuse, or Great Bigarreau of Mezel.*

and while for market it, like Coe's Transparent, is too tender, as a variety for the table it should be always in the orchard and garden.

MONSTREUSE, OR GREAT BIGARREAU OF MEZEL.—This is a cherry of very large size, the tree of broad, open habit producing its fruit regularly, and so generally large and

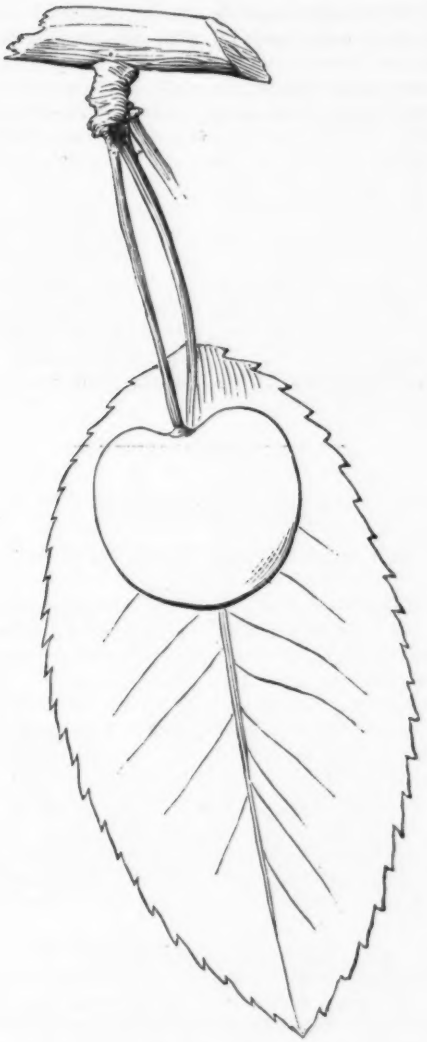

FIG. 58.—*Red Jacket.*

regular in size that it will sell for the highest price although it is not of the first quality. The fruit is a dark reddish purple, becoming black at full maturity, a long and rather slender stem, flesh purplish red, a little coarse, juicy, and sweet, quite firm, and valuable for marketing.

DAKOTAH.—Those who like the Black

Tartarian will find this variety an improvement upon it. In habit and growth of tree it is very similar; but it ripens its fruit several days earlier, and when ripe it is richer and better flavored. It is also a more abundant bearer. The fruit is large, much resembling Black Tartarian in appearance, somewhat more firm, and bears carriage better, which taken with its time of ripening will, I think, make it a desirable variety when it shall become known.

ELTON.—An old and well-known sort without which no collection can be complete. The tree is an open, spreading grower, a good bearer, of a large, very handsome fruit of a light yellow ground mostly overspread, shaded, and mottled with red; the flesh firm, juicy, sweet, and very high flavored. It is a profitable and good sort for market or table use.

RED JACKET.—This is one of the latest ripening varieties, coming in with Downer's Late, to which it is far superior in size and quality of the fruit, and the tree equally hardy but more spreading, and growing to a larger size. It is one of the most vigorous and hardy of the sweet cherries, an abundant bearer, of a large fruit mostly overspread with red when fully ripe, half tender, juicy, sweet, and rich; fine for table and highly to be valued for market or canning.

EVERGREEN SHRUBS.

FROM ELLIOTT'S "LAWN AND SHADE TREES."

A MORE common, free, and abundant use of evergreen shrubs should be adopted, because of the cheerful, bright, verdure-like appearance produced in the landscape when their dark and light green foliage and blue or scarlet berries cover with harmonious life-like beauty what otherwise in the dreary winter scenes would be barren and unsightly. Their use among deciduous shrubs can be more general than that of evergreen trees, from the fact that they only rise a few feet, and therefore, unlike trees, can not exhibit shade and gloom to the scene. Many a place is made beautiful in summer from the foliage of shrubs and the bloom of flowers, that in winter presents a dreary barren aspect, which is easily changed and draped with foliage and beauty by the simple planting of evergreen shrubs. Were we to write an entire book in advocating their general use, it would not half express our feelings, or perhaps any more advance their frequent planting than our present few words. To the planter who seeks to create constant beauty, or who desires easy gradations and harmonious combinations in landscape; to him who has but small grounds in the suburbs of a city; to those who desire to clothe the last resting-place of earthly friends with emblems of eternity and lasting beauty, let me urge upon their attention the claims found in, and beauty derived from, the use of shrub evergreens.

Among the most hardy, and adapted to all sections and positions, the JUNIPER in its varieties is, perhaps, most worthy of frequent and universal planting. There is, as we have described, trees under this head that do not bear clipping; but all the dwarf or naturally small-sized trees of this class bear well a free use of the shears, and may be kept in any form or shape agreeable to the wants or taste of man.

The Swedish juniper—*suecica*—is of a pyramidal habit, with a bluish green foliage and quite rapid growth. It sometimes is liable to break down from our winter snows or severe storms, and should therefore have a wrapping of small wires to

keep it in form. Its growth is from ten to twenty feet high, although it may be kept, by means of clipping, down to a height of only five to eight feet. It is adapted to point groups on the corners of diverging roadways or paths, and with the podocarpus and Irish juniper very effective little clusters may be formed.

The Irish juniper—*Hibernica*—forms one of the prettiest of little point trees; it is perfectly hardy, and always keeps a beautiful rich green color, rather darker than

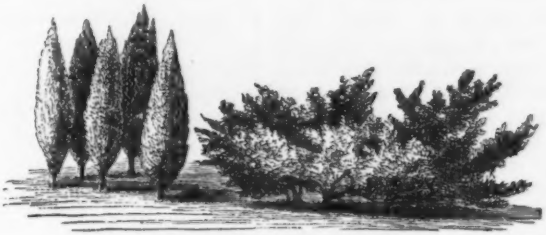

FIG. 59.—*Irish Juniper and Savin.*

the Swedish. It can be kept at any height, from that of two feet upward to five or six. The common juniper—*communis* var. *Canadensis*—is well known, but too rarely planted because it is common. Singly, upon a lawn, it grows rapidly; and although rising but a few feet high, it spreads over a broad surface and forms a remarkable and effective object. *Juniperus squamata* is also a variety effective as a large spreading plant upon an extensive lawn. *Juniperus nana* and *echiniformis* are of a lighter, more yellow green and compact habit, and for positions where only a limited space

FIG. 60.—*Common Juniper and Prostrate Juniper.*

can be given them, are very beautiful. They are nearer allied to the *juniperus sabina*, or common savin, a variety well known, and that forms one of the best masses of low growth among the whole collection.

The *juniperus prostrata* is a very low creeping variety, of value in rock-work, and for massing and forming a low evergreen bed upon a lawn. It is admirable also for planting on small mounds and in cemeteries over the graves of the departed.

There are many more varieties, but as yet comparatively scarce; all, however, or nearly all, promise to prove hardy and of value in forming features of beauty in a landscape. We have seen a most beautiful mass made of junipers by taking the Swedish as the center plants, then the canadensis circling it, and intermingling the squamata and sabina with here and there a hibernica, and toning down with nana, to an outside finish with prostrata.

Dwarf Pines.—There are several varieties of the pine family that are extremely valuable in the formation of groups and masses of low evergreens, among them one under name of *pinus pumilio*, or dwarf mountain pine, is most commonly in use. It is classed by many as identical with *pinus pumilio mughus*, or mugho pine, but the specimens we have had to deal with under the latter name have been of a more compact and diminutive growth, although the leaf and color are the same.

For positions where a compact, round-headed plant from six to twelve feet high is wanted, and for forming a foreground to large masses of round-headed pines, or for use in small yards, the dwarf mountain pine is exceedingly valuable. It is perfectly hardy, of a deep rich green color, and when grown by itself, fully exposed, it forms a very compact small tree. In small pieces of rock-work, and for crowning slight elevations at the turn of roads, etc., we have found its use very effective.

Broad-Leaved Yew — *Podocarpus.* — The broad-leaved or long-leaved Japan yew is not hardy in all parts of the Northern and Middle States when fully exposed; but there are many locations in almost every place of any considerable extent where groups of shrub evergreens are wanted, and where considerable shelter may be afforded; in all such, and in some sections, as around New York, southern New Jersey, and on south and west, it is a very desirable variety to plant. The tree is erect, compact, with a rich dark green broad leaf, distinct and beautiful. There are a number of varieties, but the *japonica* and *taxifolia* are probably the hardiest. Any good loamy soil suits it.

Yew Tree—*Taxus.*—All of the yew family are beautiful plants, and of great value in making up a place. When fully exposed to the sun, they sometimes burn and brown in winter; but wherever they are shaded by having a position on the north side of buildings, the northern slope of a hill, or the north side of a group of large evergreens, they retain their color perfectly. The common English yew—*baccata*—is the one most generally grown. It forms a bush of from six to twelve feet high, and when old enough to fruit, forms one of the most elegant of evergreen shrubs.

The *erecta* is more compact and upright, not as spreading, in its habit; while the *horizontalis* is spreading, almost creeping, in its growth. There are also several varieties with variegated foliage very curious and ornamental. The Irish yew—*Hibernica*—is of slow, compact, upright growth, forming a very small, round, pillar-like tree, but it will not endure any exposure to the winter suns. The American yew—*Canadensis*—is, perhaps, the most hardy of all, but it is not of as rich and dark a green. As a class, however, masses of them are very beautiful; and when azaleas are mingled with them the result is quite satisfactory, especially in spring, when the azaleas are in bloom. In England the yew is used more or less for hedges; but as a hedge plant, except in positions shaded from the mid-day sun, and for the purpose of variety, its use in this country is not advisable.

Ash Berberry—*Mahonia.*—Among all the shrub evergreens, the mahonia for general use is, without exception, one of the most valuable. In general appearance of leaf it much resembles the European holly, a plant that is not hardy in the Northern or Middle States; it is of the easiest possible culture, growing freely in any soil not wet. Besides its glossy foliage, in spring

FIG. 61.—*Ash Berberry.*

it gives a profusion of bright yellow flowers, followed with rich purple berries, making it ever attractive and ornamentally beautiful. Our drawing represents a bush of the variety *aquifolium*, with a cluster of flowers. This is the most common sort, and is, perhaps, the best for masses or low hedges; but where a single plant only is to be grown, we should select the *fascicularis* as being more unique in form of foliage, and more subdued in the tone of color. In fully exposed positions facing south, the mahonia occasionally browns and loses its foliage; but we have never known the plants to kill, and early in spring it puts on new leaves and comes forward rapidly, blooming as if it had suffered no loss.

BOX TREE—*Buxus.*—The common dwarf box—*buxus suffruticosa*—is well known, for it is, perhaps, the very best dwarf edging plant for flower-beds and borders that is known. It should always be transplanted early in the spring, and, by a clipping with shears from year to year, never permitted to grow above six to eight inches in height. The tree box—*buxus sempervirens*—forms a pretty dwarf ornamental tree for decorating small lawns or grass-plots, or for rounded points of pathways, etc. There are several varieties among them, comprising *latifolia*, or broad-leaved, which is the best; the *mystifolia*, very narrow-leaved; the *aurea*, or golden variegated-leaved; the *argentea*, or silvery variegated-leaved. A sandy or light gravelly soil seems best to suit the wants of the box tree, and a partial shade from southern suns is requisite to enable it to retain its foliage.

EVERGREEN THORN—*Pyracantha.*—The fiery or evergreen thorn—*cratægus pyracantha*—is an evergreen shrub, at present only to be found occasionally in some amateur's grounds, but highly deserving a place everywhere that ornament or beauty is sought to be created.

As a single plant, it has rare attractive features in its clusters of white flowers, blooming in the month of May, followed by round brilliant scarlet berries, that often remain on a great part of winter, and from whence its name of fiery thorn. In forming low-growing hedges, it is one of the very best plants, as it is perfectly hardy, and bears the shears as well as other thorns. Our engraving shows a plant with a few

FIG. 62.—*Evergreen Thorn.*

clusters of flowers. Any good rich garden soil will answer to grow it.

COTONEASTER. — The cotoneaster is a family of plants that for rock-work and positions where they were not exposed to the south, we have found in use very attractive and effective.

There are three or four varieties, all with white flowers, and all of a low, rather pendant and creeping habit, and their use should be more generally adopted, especially in rock-work, or as undergrowth in shaded situations.

ANDROMEDA.—Two varieties of andromeda, viz.: *floribunda* and *polifolia*, are described by Mr. Fuller in his "Forest Tree Culturist" as worthy of extensive cultivation. They are of slow growth, with lanceolate leaves and white flowers, forming pretty, low shrubs, and suited even to wet soils. We have had no experience with them.

EUONYMUS OR SPINDLE TREE.—This is a class of beautiful evergreen shrubs that prove partially hardy about New York, and are suited for planting in the Southern States; but they can not be depended upon anywhere north.

HOLLY—*Ilex.*—The European holly is so beautiful in England, that almost every planter of a new place feels anxious to adopt it. Repeated experiments with it, however, compel us to, all unwillingly, write that it can not be used and prove at all satisfactory. Even our native variety, the *ilex opaca*, frequently browns badly, and occasionally loses its foliage completely; and although beautiful when it can be perfectly grown, it proves so often unsightly rather than beautiful, that it is unwise to use it except in shaded situations.

MOUNTAIN LAUREL—*Kalmia.*—The kalmia, or laurel as it is commonly called, is one of the finest evergreen under shrubs. It is perfectly hardy in any exposure, but it chooses a soil largely composed of vegetable loam and sand. Near running water it grows and blooms most freely, but naturally it is found often in the most barren rocky situations imaginable. As an under shrub it is particularly desirable, as it bears the drip of other trees without perceptible injury. Its flowers are produced most freely in June, but it continues more or less of bloom for a month or six weeks in succession. The *latifolia*, see engraving, and *augustifolia* and narrow-leaved, or sheep laurel, are the most valued varieties. The flowers of the former are a white or light pink delicately spotted, while those of the sheep laurel are dark red.

FIG. 63.—*Kalmia.*

RHODODENDRON. — The rhododendrons, or rose bay as sometimes called, are a class of broad-leaved evergreen shrubs of exceeding beauty both in foliage and flower. Like the kalmia, they succeed best when grown in soil composed mostly of vegetable

FIG. 64.—*Rhododendron.*

loam and sand, although some cultivators advise free use of well-rotted animal manures. Such application we have found to produce free growth, but at expense of hardihood, and when necessary to improve the soil, advise fresh woods loam rather than animal manure. The varieties *maximum* and *catawbiense* have been tested as to hardihood all over the Union, and everywhere proved successful. Many others are probably equally hardy when grown under the same circumstances; but a large proportion of those sold from year to year are imported plants, and in getting acclimated too often die. We consider the great secret in growing rhododendrons successfully consists in keeping the soil *cool* and *moist*, and this is best done by surface dressing of light half-decayed leaves a depth of three or four inches over the soil in which the roots are growing.

A free use in planting of kalmias and rhododendrons in the small yards and gardens of our suburban residences would give to them a cheerful living brightness in winter, and add largely to their beauty at all seasons.

CNEORUM—*Daphne.*—The garland flower, or trailing *Daphne cneorum*, has been only recently introduced to notice, although an old and well-known plant. For rock-work planting, for points on beds or borders, it is one of the best as well as attractive plants. Its flowers are bright pink, sweet scented, and produced freely in April and May, and again in September.

FRUIT IN VERNON COUNTY, MO.—This region of country is quite new as yet in respect to fruit culture; but from what is written us by Dr. M. A. Harding and others, we have no doubt of its proving a valuable and profitable fruit-growing section. Dr. Harding writes that "The blush of fruit is deeper here than commonly found in St. Louis County, Mo., and the skin thicker." Why, this latter is beyond our conception! Our correspondent considers this thick skin, or rind as he terms it, a feature of value to them, in that the fruit is less liable to bruise; may be transported longer distances successfully and profitably; and as thus being less liable to decay, gives orchardists, in that section of country, advantages which fully compensate for their distance from that of the consumers of the fruit. Our correspondent accounts for this perfection—thick skin, etc.—of their fruits upon the fact that they have in that climate a dryness of atmosphere greater than any other of the States. Of this we know nothing ourself; but have only to say that if such is the fact, we imagine Vernon County, Mo., will prove one of the best grape-growing counties in the States.

MASSACHUSETTS vs. NEW JERSEY.

BY ROBERT MORRIS COPELAND.

[CONCLUDED.]

In order to force vegetation successfully, we must have control of heat which can be applied at will to both the roots and the foliage of the plants we are cultivating. This control of heat is acquired in green and hot houses by using fire heat either directly, as when a furnace and its flues warm the building; or indirectly, by steam and hot water conducted about the house in pipes. Flues have many disadvantages: they are very liable to smoke; they always heat the house unequally, overheating the end nearest the furnace, while the other extremity of the house may be cold.

Steam or hot water by its circulation reduces the inequality, the cooling or condensing of the water or steam at the point of the circulation most distant from the boiler making a species of vacuum which is filled by more hot water from the fountain, the cooled portion hastening back to take its place in the boiler, thus keeping up an equable heat in all parts of the house.

To illustrate the advantage which hot-water heat has over manure when applied to hot-beds, I will give the experience of a practical man near Boston, who has, I think, proved that climate and soil are under the control of the will of the cultivator, and that Massachusetts may be a worthy rival to New Jersey in market gardening.

The advantage which fire has over manure has long been known, and made use of, in England; and more than ten years ago I urged the market gardeners, in a book called "Country Life," to imitate the European example. In that treatise I gave not only the theory and facts, but plans of advantageous methods of using hot water. But farmers and gardeners are proverbially slow about making improvements; and only within a few years have the most enterprising begun to change their system.

But to return to my example. Mr. Augustus Calder is the son of a market gardener who lives in West Roxbury, a suburb of Boston, who has cultivated for many years a cold gravelly hillside farm as a market garden. Manure, labor, and hot-beds have induced his unfavorable soil to furnish profitable occupation to father and son.

Wearied with hauling manure, and the constant attention and labor which manure-heated hot-beds require, Mr. Augustus Calder last year determined to try what he could do with fire heat. Against the advice of his friends he abandoned the old frames, and built a simple span-roofed hot-bed, running north and south, out of his hot-bed sashes. He raised the front of the house 1 foot from the ground, and dug a cellar under it 4 feet deep, and made it 10 feet wide. The sashes meet on a simple ridge of plank 6 feet above the walk which occupies the center of the house; the ridge is kept in place by the fixed sashes, every other one being used like a rafter to give strength to the roof. Movable sashes are hinged at their lower end and shut into the ridge, where they are confined by a hook, hasp, and staple; the joints of the fixed sashes are covered by half-round moldings which are attached to the edges of the movable sash. The crack along the ridge is made water-tight in the same way. On each side of the walk, which is 2½ feet wide, are tables 3 feet from the floor and 3¾ feet wide; these tables are supported on cedar posts; 1 foot of the upper part of the table being filled when the house is in use, either with earth or pots. This

building, 150 feet long, is heated by hot-water pipes, which carry the water of a small boiler around the house and under the tables, insuring equal temperature in all parts, and giving both bottom and top heat to the growing plants. In such a building there are very obvious advantages. There is plenty of room for the workman to move about; manage his beds; water, weed, transplant, etc. He can transplant in cloudy and bad weather; can raise or lower the temperature at will; can, by the introduction of partitions and an extra pipe, heat one part more than another; can grow a variety of crops at the same time or in sequence, and need only change the soil in his beds once a year.

This experiment was watched with great interest by Mr. Calder's neighbors, who could not believe success could follow such an abandonment of the traditions of the fathers. But success came in the shape of firm, hard, dark-green heads of lettuce before the hot-bed lettuce had begun to make heads at all. His lettuce crop all sold quickly as soon as it was ready for market; and his cucumbers, radishes, and tomatoes carried his profits on to the end of the season.

A particular advantage follows this method of forcing lettuce; in hot-bed lettuce some of the outer leaves are sure to be touched or burned by the hot ammoniacal vapor of the manure; every leaf so injured decays and dies down to the stem; all these rotten leaves must be removed before the head is ready for sale. Of course such a depilatory process reduces the value and hurts the attractive appearance of the head. None of Mr. Calder's heads of lettuce suffered any more than if they were in the open ground, and could be removed directly from the table on which they grew to the barrel for market.

Encouraged by this success, he determined to enlarge the field of his operations by more houses and different crops. During the summer he built three houses, 160 feet long, and of the same general dimensions, in the ridge-and-furrow style, all to be heated by hot water from a single boiler. These houses he has devoted to lettuce, cucumbers, strawberries, and violets, for with the true spirit of the inventor and radical, he decided to add flowers to the crops he had always cultivated, and selected violets for his first experiment.

To give the violets every chance for success, he tried to learn how florists cultivated them. He found the plants were struck from cuttings in the summer, and were wintered in pots or cold frames until February, when they were brought into the green-house and placed near the glass, and exposed to a high degree of heat, the temperature being maintained as high as 70° by day and 50° by night. The soil in the pots and frames was the same as that used for all other green-house plants.

After considering the natural habits of the violet, Mr. Calder decided to follow a different system of treatment. The violet is a spring plant; blossoms most freely before the weather is warm, when the temperature by day is about 60°, and by night about 40°. It seems to prefer rather damp and low places, and to select as soil decaying leaves and carbonaceous matter. Mr. Calder followed nature's method in his treatment. His first experiments were with five kinds of soil. He planted some of his well-rooted cuttings in sand, in loam, in manure, in manure and leaves, and in pure leaves. The leaves were not decomposed, but had been used to bank hot-beds during the winter.

All the violets grew—those in the manure being sickly, while those in the leaves surpassed all their rivals; they made stout, stocky plants, with short dark green leaves, and set a plenty of flower-buds. During their season of growth he frequently lifted the plants to examine their progress, and found the clean white roots had, as it were, sewed masses of leaves together; and when he lifted a violet it would raise by its roots a mass a foot in circumference. Accordingly, when he prepared his tables for win

ter forcing, he covered them with a thick bed of leaves, and no more loam than would fill the space between the plants. After beginning to force, the thermometer was kept as nearly as possible at a spring temperature—an average of 60° by day

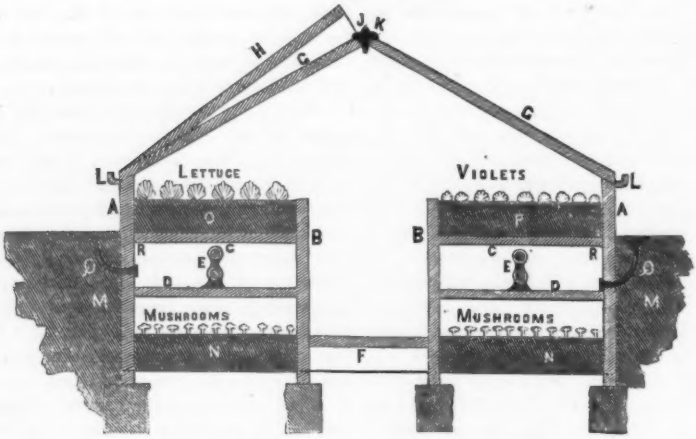

FIG. 65.—*Sectional View of Calder's Houses.*

A, A, Outside posts and plank frame.
B, B, Inside do.
C, C, Plank bottom of tables.
D, D, Joists spiked to posts to sustain water-pipes.
E, E, Water-pipes.
F, Floor of alley.
G, G, Fixed sashes.
H, Movable sashes.
J. Ratchet for opening and fastening movable sash at ridge.
K, Plank ridge with half round molding for stop.
L, Gutter.
M, M, Outside earth.
N, N, Mushroom beds (not in Calder's house).
O, O, Lettuce beds.
P, Violet beds.
Q, Q, Subterranean ventilation (not in Calder's house) to introduce air warm.
R, R, Air space between tables and walls (not in Calder's house).

and 40° by night; and as a consequence of the moderate heat and good food, the violet houses were purple with blossoms from the 1st of February. The flowers were engaged by a florist at 1 cent each, more or less; in the week ending Feb. 22,

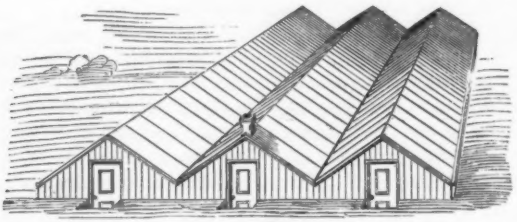

FIG. 66.—*Perspective View of Calder's Houses—Hot water, boiler, etc., in end of middle house.*

there were 13,000 gathered, without seeming to be missed; on the 28th of February 3,300 were gathered; and yet the following day their places were all filled.

Gardeners who visited these houses during the winter predicted their failure because they were so cold; but the result has proved that cold is better for the violet than heat. But violets have not been allowed to monopolize all the room; the lettuce has been of the best quality, and has sold in barrels readily, to go to New York, at $1 25 per dozen heads.

Mr. Calder intends to stock his new houses with roses, violets, and carnations, reserving space for salads, strawberries, and cucumbers. He has at present 2,500 pots of Triomphe de Gand strawberries, which are beginning to grow, and occupy a part of the space left empty by the marketed lettuce. These strawberries will be kept at a low spring temperature, so as to bring them into bearing about the middle of May. Should they net 25 cents per pot, they will pay all the expenses of his season's experiments, leaving the other crops for profit.

I might have selected some other market gardener florist to illustrate my argument; there are many in the vicinity of New York who are pioneers, and very successful in this kind of culture, but I wished to show that Massachusetts is not debarred by climate from successful market gardening. This sketch shows that the careful and intelligent man may make his own climate and soil, at no very great cost. It is obvious that this kind of forcing is much cheaper than any other. To heat a house 136 feet long and 16 feet wide will require 8 tons of coal for the winter and spring, or $64. To put 100 feet of hot-beds 6 feet wide into working order would have required 14 cords of manure, which would have cost $140. The manure, as we have seen, for forcing purposes would have been valueless when once used, and to re-make the beds would have cost another $140. The labor of the two fillings and removals would have cost at least $25, or $330 against $64.

Mr. Calder has also shown in strawberry field culture that Massachusetts need not yield the palm to any other State. He has cultivated his strawberries for several years in a peculiar manner: he sets the vines in beds 30 inches wide, the strawberries 10 inches apart in the row, the rows being 10 inches and the beds 18 inches apart. The plants were not allowed to make any runners, all runners being cut off as soon as they appeared, consequently each plant started making five or six heads. When strawberries grow in this single and individual manner, it is easy to keep them free from weeds, with the hoe or the hand; if any grow large, they can be pulled up without fear of unsettling the new runners, which are the staple of most strawberry beds. By giving wide alleys and narrow beds, there is no temptation to the picker to kneel on the bed and crush the ripe or green fruit; and as the plants are all of the same age, the fruit is all of uniform quality from the first picking to the last. From one eighth of an acre cultivated in this manner with strawberries, Mr. Calder sold $600 worth of fruit, which was equal to the value of the crop which his father gathered from an acre. Without wishing to discourage emigration to the vinelands of any State, may we not reasonably ask all who wish to get their living by cultivating the soil, to first try what careful and well-directed labor will do with the lands where they have their homes at present. If these facts which I have given are of universal application, no New Englander need despair of getting a rich reward from the soil of his native State.

I give a section and birds-eye view of Mr. Calder's hot-beds, to show the method of heating, and their general arrangement.

THE SQUASH BUG.—We have saved our melon and squash vines from the injury caused by the squash bug (*coreus tristis*), by covering the vine with earth half an inch to an inch deep all along from the root to the first flowers.

BEURRE DE L'ASSOMPTION.

THIS is one of the new pears described by A. Leroy as of first quality. It is claimed to have originated at Nantes, in France, in 1863. The tree is said to be vigorous, with numerous strong branches, and very productive. Fruit, large, pyriform, slightly obtuse, citron yellow, marbled and dotted with reddish brown; flesh, white, half fine, juicy, melting, vinous sweet, with a delicate perfume. Ripe, last of July and early August.

We take the above from the valuable

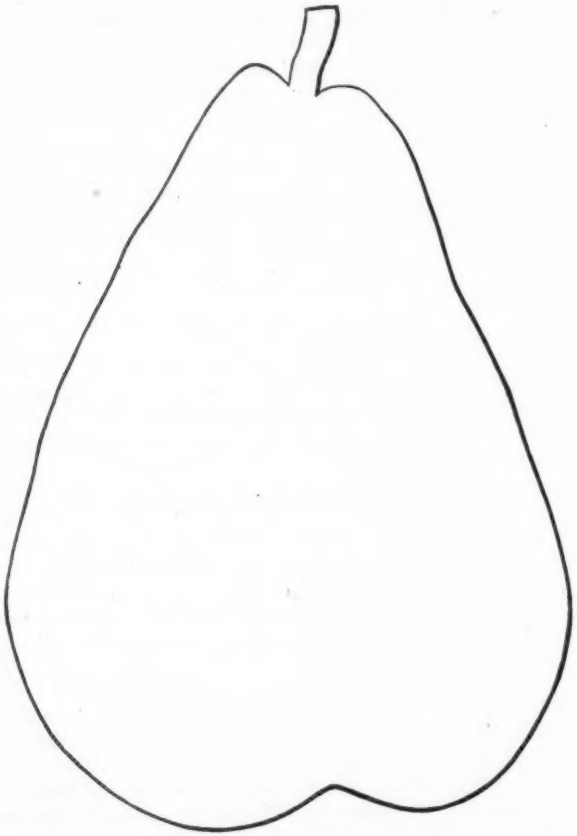

FIG. 67.—*Beurre de l'Assomption.*

and carefully prepared volume on Pears, by M. Andre Leroy, Angers, France. To our knowledge the variety has not as yet fruited in this country, and may prove some variety already known under another name. If it prove a new sort, with the qualities given it, it will be valuable here for its size and period of ripening.

BALTIMORE GREENING.

Last autumn we received from John Edgerton, Coal Creek, Iowa, samples of an apple under name of Baltimore Greening. We have no record in fruit books of the variety, nor do we recognize it as identical with any variety under another name. We made the accompanying outline and description of the fruit, and shall be glad to learn more of it.

Fruit, large, globular, flattened, somewhat angular, greenish yellow with a brownish blush cheek in sun—some slight stripes of russet, and a few small but raised gray dots; stem, short; cavity, broad, open, and deep; calyx, closed, or nearly so; basin, open, deep, slightly furrowed next the eye; flesh, yellowish, rather coarse, tender; mild sub-acid; "very good;" core, medium; seeds, broad oval pointed. Season, December.

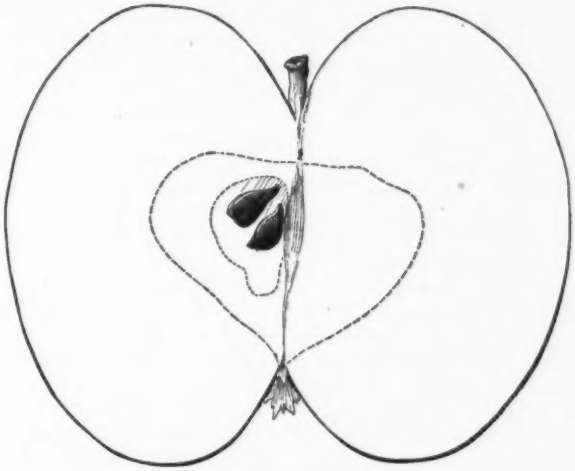

Fig. 68.—*Baltimore Greening.*

GATHERING FRUIT.

The appearance and value of fruit depend very much upon when and how it is gathered. Strawberries, if picked carefully with half or quarter of an inch of the stem attached to each berry, and laid carefully into the basket, will carry better and sell for a greater price than when pulled hap-hazard, some with hulls and stems on and some with them off. Again, if they are gathered when they are perfectly dry, they will keep longer and retain a better flavor than if gathered while wet. A little water not only hastens decay, but it rapidly destroys the flavor of many delicate, soft varieties. After being gathered, they should never be allowed to

stand out exposed to the sun, as with many varieties it takes but a little while of exposure to hot, clear sun to destroy their brightness of color.

Currants should also be gathered with their stems; they should also be dry, and all leaves thrown out. Gooseberries, if for shipment, should be gathered dry, and a careful expulsion of all leaves will cause them always to command the best price. Like the strawberries, care should always be taken not to expose them to a hot sun after gathering, for such exposure soon gives them the appearance of being half cooked.

Raspberries and blackberries are too often seen in market and on the table half broken and mashed. None but whole and perfect berries should ever go into the box or basket for market. It pays to carefully assort them before sending to market, for the mingling of a few bruised or mashed berries induces decay and detracts from their value in the judgment of the dealer.

Cherries should never be gathered when otherwise than perfectly dry. We have known them to decay entirely in twenty-four hours when gathered while wet. It pays also with cherries for market to carefully sort them over on a table, picking out any mashed or wormy or imperfect fruit before sending to market. Of course the stems are, or always should be, attached, although we have occasionally seen them in market looking more like round cranberries than cherries.

Peaches should be left on the tree until fully ripe, and then gathered carefully with thumb and finger, and at once laid into the basket or box in which they are to be marketed. If the bloom is rubbed off the peach by rough handling, its beauty of appearance is injured, and it will decay much sooner than if untouched. Formerly it was supposed that the peach must be gathered before fully ripe in order to ship it any distance; but practical experience has proven that *ripe* fruit, not quite soft, will carry just as well as unripe, and command a much better price.

Pears and apples should never be picked from the tree by breaking the stems. Unless the stem will separate freely from the tree, the fruit is not ripe; it will neither eat or cook good, and is only fit for those who want a touch of cholera morbus. Apples as soon as gathered may be sent direct to market; but nearly every variety of pear is improved in appearance and quality by keeping in close, dark drawers, wrapped in flannel or soft paper, or packed in bran a few days.

For profit, and in order to obtain the highest price, all fruit pays to be assorted into two or more grades. A few scattering large berries, apples, or pears in a quart or bushel do not assist in advancing the price; but if carefully packed by themselves will bring the highest price, and often induce the dealer to buy the small fruit in order to get the large.

PATENTS IN HORTICULTURE.

BY A. S. FULLER.

If patents are necessary to protect inventors in other branches of science, why not in horticulture? Are not the fruits of the earth of as much value to mankind as the glittering ornaments which may add splendor, but not one moiety to the real welfare, of the possessor?

We think if there is any branch of national industry which would repay the fostering care of the government more than another, it is that of horticulture and its near relative, agriculture. The progress that we have made in the past half century in agricultural productions has in a great

measure been owing to the protection which patents have afforded to inventors of agricultural implements.

What other great inducement could we offer the inventor to stimulate his genius than that of wealth? Would honor or the gratitude of his fellow-countrymen be equally as potent in developing his inventive powers as money? We think not; for just so long as money remains the great motive power which moves society, just so long must the glittering promise of it be given to individuals for the purpose of bringing out their latent talents.

Secrets in horticulture we have always condemned; perhaps our opinion has been biased by circumstances, from the fact that we never were so fortunate as to meet an individual who happened to possess one, who was not pretty thoroughly ignorant of all other matters relating to the subject.

This, however, is no good reason why there may not be secrets in horticulture, or that a man, otherwise ignorant, may not discover something that would be valuable to the profession.

Steam as a motive power was at one time a secret to all the world except Watts; but when he made the discovery known, others followed in the track, as readily as one wave of the great ocean succeeds another

Every individual has a natural right to benefits derived from his own labors, and our patent laws were framed for securing this to inventors, while at the same time it encouraged the divulging of secrets. When an article is patented, it is no longer a secret, but the whole world is invited to make improvements upon the same, the original inventor receiving compensation by royalty, or otherwise, upon whatever portion his inventions may contribute to the whole.

We want no secrets in horticulture; but we do require some adequate means of protection to those who may by their individual exertions introduce, invent, or produce any article or process of manufacture which shall be a benefit to his fellow-beings. Under existing laws, a man who invents a machine or compound to destroy his fellow-man may get the same patented, and derive wealth therefrom; but one who spends a lifetime of toil in discovering or producing a new fruit, grain, or vegetable which shall save nations from famine, or add untold blessings to his race, has no protection against thieves except his own individual strength, which is often quite inadequate for the purpose.

We will suppose a case, and in doing so we will not draw upon our imagination sufficient to exceed the truth.

Mr. A. has been growing seedling grapes for twenty years, but in all that time he has produced but one variety that he thinks worthy of dissemination. This one is a great acquisition, and it will be largely planted; hundreds of vineyardists will get rich from its products; government will receive a large amount, not only from the income tax of those who cultivate it, but from the vine from its fruit; and as a whole, it will add millions to the wealth of the country. At present there is but one vine in existence, and that is in the garden of the originator. Now, it is well known that a variety may be valuable in one locality and not in another, and the question naturally arises: how is Mr. A. to determine the real value of this variety except by dissemination? We all agree that this is his only course; but if he propagates and distributes the vines, what security can he receive that others will not propagate from them? (and perhaps more rapidly than himself) so that while he is waiting to learn the true value of his production, so many thousands of it have been grown by others that he can make nothing by its propagation or sale. In fact, the very means which Mr. A. employs to learn the true value of his new grape has debarred him in a great measure from receiving any reward for his labor.

It may be said that he should have placed the specimens in the hands of only

honest men. True, this would have been a partial protection against fraud; but so long as rascality travels in disguise, and has access to honest men's gardens, this precaution would be of but slight advantage. It is an easy matter for those who feel so disposed, to pocket a few cuttings or seeds of plants, and thereby become possessors, at least, of any new and valuable product of the soil. We could cite many instances, if it were necessary, to prove that many of our horticulturists have been robbed of the reward of their labors by such means; and under existing laws there is no remedy.

The author of a book is protected by copyright, and the compounder of a drug and the inventor of a machine—no matter how simple they may be — receive the fostering care of the government, while the agriculturist or horticulturist is left in a great measure to the mercy of thieves.

We do not wish to advocate the protection of monopolies nor the patenting of every process in horticulture which ignorant or shrewd men may bring forward, but we do want to see some system adopted which shall protect honest men against rascality, and afford them means of receiving a fair remuneration for their labor, Why can not we have an agricultural bureau at Washington, where new fruits, flowers, or grains may be deposited, with an accurate description of the same?—the depositor furnishing proof that he is the originator, and receiving a certificate therefor, and this shall secure to him the sole right to propagate and sell the article the same for a period of years, as in the case of patents. Perhaps it would be better to have such a bureau connected with each State agricultural college, and in the experimental classes of each the products of the State might be tested, and thereby furnish correct information as to the value of each plant submitted to its care.

It appears to us that some such system is required, and that by its adoption our progress would be more rapid, and that the honest and industrious laborer in the cause would feel encouraged to put forth greater exertions than he does under existing circumstances.

We believe that others feel the necessity of some change in our present system as well as ourselves.

REMINISCENCES—WHAT WE HAVE LEARNED, AND HOW WE LEARNED IT.

A country that has passed its novitiate in any great art has good reason to be proud. When this art is at once a blessing and a riches to the individual citizen and the nation, our pride may well be excused by lookers-on. It is not, however, within the rules of either individual or national gratulation that we should refuse to acknowledge our obligations to our elder brethren in the art; nor full of the most high-minded recollections of the aid thus afforded, must we forget that we have learned by mere dint of energy and perseverance more than ever has been taught us by extraneous assistance.

Premising thus much, may we take a glance at the means by which we have achieved so much skill and experience in the ancient art of gardening; while at the same time we have taken up as we journeyed along, a few principles of vegetable physiology, which we are unwilling in our varied practice and extensive reading to set aside. Practice first and theory afterward, is the wise rule of action for all who would make the best use of their brief hour of earthly labor.

We wish to learn something of the laws of vegetation; plant a seed, a bean for instance; cultivate it and study it; follow

the workings of the hand by the reflections of the mind, and nature will teach you her most wonderful lessons; but without the growing plant, how useless the teachings of the learned physiologist! True, science wrapt in its somewhat hidden laws may forget the mere worker in the garden, but the worker many a time and oft reaps harvests unknown to the sage.

Thus have the pioneers in this grand field of beauty taught themselves the art which their children have so far developed, and it is now but the appointed time when the way through the desert begins to be made clear; when the rose amplified by art is planted by the side of the wild one of the prairie, and both are acknowledged by the eye of taste to be alike beautiful, for are not both products of nature's storehouse, variously manipulated by the genius of man?

Our art is eminently a peaceful art, for while each in the rude manner in which he has been instructed by corrupted custom, endeavors to bring to the common treasury his humble gifts, so his brother worker, imagining his achievements to be more worthy, but follows in his emulation the principle of aiming at perfection without the lesson of humility, so necessary as its counterpoise.

It was thus in the early days of our American horticultural novitiate, that every worker emulated the zeal of his neighbor, and the results though occasionally a little discourteous, were soon adjusted.

In the midst of this Babel of landscape gardeners and garden architects from every corner of the civilized world, we had a merry time. The ax was heard at every step, and the grand trunk of each prostrated giant sent a knell to the heart of the true lover of arboricultural grandeur and beauty; but on this spot were to be raised new offerings to Flora. Here were to be reared the denizens of other climes, for had not our Bartram been trading in our trees and plants, gaining in exchange new forms, unknown to us, the types of a vegetation destined one day to be as familiar to our children as our commonest trees are to us? So that we permitted the forest to be laid waste, and on the ruins of cedars and tulip trees and persimmons we planted the less sturdy growths of a much less severe climate. In the effort to obtain these stranger forms of tree, and shrub, and plant, what a world of that enthusiasm which still lives, but has well nigh culminated; in the history of its earnest promoters we read the lives of the honored dead who have left their monument in an enriched and varied artificial landscape.

The year in which the HORTICULTURIST took its place among the aids of the new school of gardeners was over one hundred years later than the date of the introduction of our hemlock spruce to English gardens by Peter Collinson, and in that century of active experiment and research, what wonders were accomplished. Wonders, indeed! when we reflect on the means of intercourse between the old garden and the new, when we calculate the world of trouble and anxiety requisite for an interchange of trees and plants at that distant day.

Such a romance is furnished us in the graphic memoirs of the Bartrams and their correspondents; and should not your young readers have resolved to read of nothing but "new grapes" and "wine-making," just recommend them to take a hasty glance at "Bartram's Memoirs," by Darlington, a worthy memorial left by the modest author of the "Flora Cestrica" to a still more worthy arboriculturist.

Have we now in the year 1868 any authentic available history of the successive stages of progress through which we passed toward our present position? Is such a narrative worth the time and pains it would demand? If so, let it be forthcoming.

D. S.

SCRAPS FROM MY NOTE BOOK.

WHITEWASHING TREES.—I often see this advised, and some of my neighbors adopt the advice, making their orchards and trees around their house good representations of tombstones in a cemetery. As the object of using whitewash or alkali upon the bodies of trees is to destroy any insect life that may have collected or attached itself thereto, and as weak lye is equally or more effectual than whitewash, and less glaring and offensive to the eye, I see no reason why editors of journals should ever permit the issue of advice to use whitewash without a word of comment. Possibly they may be jealous of their country friends, and thus advise them to destroy Nature's own coat and make the appearance as artificial and absurd as their own town views.

STRAWBERRIES.—Oh, what a bother! I have now about sixty varieties, over which I am daily looking for the superior excellence said by the originators to be wrapped therein, according to name. Among all the sorts, Wilson is the first to bloom; and I have always been able to gather a little fruit from it as early as from the earliest sorts; but its main crop of course we all know is not of the earliest. I do hope the next meeting of the American Pomological Society will weed out the "suckers" from this class of fruit.

ASTRACHAN CRAB APPLE.—Some years since I had a variety of the Siberian Crab under the above name. It was a half larger than the Large Red Siberian — so say my notes—"of a bright, rich red, very showy and beautiful." I have lost it, and would like again to possess it, if any reader of the HORTICULTURIST has it.

HONEY PEACH.—A nice little fruit that should be in every amateur's garden, and especially in orchard houses. I believe it was originally grown by Charles Downing from a seed received from China.

DANDELION.—Although a common weed, and therefore disliked, yet a mass of dandelions, when in bloom early in May, presents one of the most gay and rich golden shows possible to be created. With a little care, to prevent them from going to seed, a bed may be kept within bounds, as I happen to know; and no plant that we have will at the same season, and with the same amount of labor and care, present a more gorgeous display of flowers.

ROADSIDES.—Riding along in the country to-day I passed a number of places where new houses were just built, and evidently the owners were disposed to make their places "look smart." In so doing they had pruned away waste branches from the trees, thinned out the shrubs, and raked off all the stones and sticks; but where do you think they put them? I presume you will say in a brush pile back in the lot to be burned. No such thing. They were all thrown into the street to annoy every passer-by, and in full view of themselves and every one. Like the girl who combed her hair in front and neglected the back of her head, under the impression that no one saw her except as she saw them, face to face, so they forgot there was any view of their places except within their door yard fence lines. If there is any reader of these notes following this practice, I hope they will abandon it.

SCUPPERNONG GRAPE.—I have a vine growing on a large ailanthus, where I think the variety may answer, being about as valuable as a grape as the ailanthus is as a shade tree.

NEW-MOWN GRASS FOR MULCHING.—Nothing that I have ever used equals new-mown grass for mulching newly planted trees or for placing among strawberry vines. It keeps its place, is clean and neat, leaves no seeds, and creates no fungi, as is often the case with old tan bark or rotten wood.

E.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to F. W. Woodward, 37 Park Row, New York.

The Agricultural Department at Washington.—We are indebted to the Commissioner of Agriculture for copies showing some of the acts which that department has endeavored to perform, for which he will please accept our thanks.

The Commissioner is under the impression that because the speakers at pomological meetings do not agree as to the merits of particular fruits, the recommendation we made to have new varieties examined in the grounds of their grower or originator by a competent committee made up from well-known experienced pomologists, can not be done, because it would perhaps give to the department a too dictatorial course. We confess we do not see it in that light, because our knowledge of the judgment of *pomologists* as to *quality* of fruits we find generally uniform, and a report made by such committee on the quality, and at the same time general appearance of tree or plant as seen in the place of its origin, would have weight all over the country, and be duly regarded as the committee's opinion, not the department's. The Commissioner, however, would have one task to perform which he perhaps sees would be extremely difficult, and that is to name and make up the committee from the best talent without being compelled to work in one, two, or more of men who, having sold a few trees, or wrote a few articles for some newspaper, set themselves up as pomologists, and are anxious to bolster themselves before the public by association. If the Commissioner is going to wait until "pomological conventions and local societies agree" after discussion on the merits of varieties, he will have a good time of rest, because it is well known the discussions of pomological and local societies are participated in by the inexperienced as well as the experienced, all free and open, and just so long, of course, the words of the man who has perhaps never seen but a dozen varieties of fruit, and those during the past half-dozen years, will be placed on record just as prominently as those of the man who has devoted a whole lifetime to the study and observation of fruits. The public do not always know how to discriminate in these speakers, but the Commissioner should, and so seeing, be enabled to see that real pomologists differ very little as to quality and values of fruits. But while we have this point of checking the introduction of unworthy new seedlings in view, we shall not urge it as yet too strongly, nor shall we omit a knowledge that the Commissioner is evidently disposed to advance the interests of our country in its agriculture and horticulture, as seen in his desire to have the duty on seeds, stock, etc., for propagation, rescinded, in his abolishment of waste of money distributing old and common varieties of seeds or plants, and in many other ways not necessary here to record.

In a circular to State Boards of Agriculture, etc., we notice a request for "aid to the propagating garden at Washington for testing the merits of new seedling fruits." So far as any test made there of the identity or correctness of a variety is made a point, it may be useful to the public; but so far as a test in that garden is made, as respects its value in other sections of the States, it is worth nothing;

and the record of capable men elsewhere growing the same things is just as valuable as the record of the garden superintendent.

It is only a private garden of local influence in reality, and the public generally know it. Give the gardener a duty to perform in collecting one of everything, tree and plant, under whatever name, grow and compare them, and arrange them their true names and their synonyms, and he will be doing good for the whole country; but a test of the value of a fruit or grain, or the hardihood and beauty of a tree, shrub, or flower, at Washington, is not worth a farthing to ninety per cent. of our territory.

North Carolina Seedling Grape.—J. L. This is a hardy sort, as yet little known north of Missouri. It has a large, well-formed bunch, with large-sized black berries, of rather a harsh quality, showy, but not particularly good to eat. It ripens same time as Concord, but we do not think will prove valuable here at the East or North.

Messrs. B. K. Bliss & Son, 41 Park Row, New York, have on exhibition at their store a fine collection of cones collected by an amateur botanist from the coniferæ of California. They comprise many species, and are probably the best collection ever brought to the East. Any of our readers who are interested in the giant productions of the Golden State would do well to examine this collection, many of the cones being fine cabinet specimens obtained at the cost of much time and labor.

Refrigerators. — The warm season brings with it a desire for the means of preserving meat, vegetables, fruits, etc., from rapid deterioration. Numerous refrigerators have been manufactured and offered to the public, and many of them have partially answered the purpose intended, but at a large expenditure of ice. Lately, A. M. Lesley, of 605 Sixth Avenue, New York, has devised one, which, after a careful trial, we pronounce to be the best contrivance we have seen for the purpose intended. It is neat in appearance, substantial in construction, economical in the consumption of ice, and what is so necessary to the proper preservation of articles of food—keeps the interior atmosphere dry.

About Inquiries and Answers.—Editor Horticulturist: I often read in your journal and others interesting articles by correspondents, but which lack much of the interest they should have, by not giving the residence or location of the author—for instance, "An Hour at Home," by John S. Reid, referring to success and failure of various grapes; "The Opinions of My Neighbors," by F. Amon, referring to many varieties of fruits.

Also, when inquiries are answered by the editor in a journal, and the *inquiry* not stated, the general reader is not, in most cases, informed by the answer.

I have for many years noticed the omissions referred to, and thought them quite important.—Very respectfully, a subscriber from 1846, T. G. Yeomans.

[The above from an old subscriber and a practically successful fruit-grower touches a point we have ourselves often desired to cover, but there are two or three things in the way to so doing. First—Some who ask questions and desire them to be answered, write at the same time desiring not to have their name appear; and while we endeavor to reply to all such personally by letter, occasionally a question comes which we deem pertinent to answer in our columns. Our readers, however, we think, will hold us blameless of copying "Idem," etc., from English journals and sending them out as original.

Second—There is with many an impression that whoever writes his views of the value of fruits or flowers for publication is public property, and therefore they can address him for all sorts of inquiries free of cost. This is a growing error, and should be checked, because it deters many

a capable man from offering his name and character to the public. We have before us now a letter from one of our correspondents saying that he "has at one mail received seven letters asking for lists, and information of where to obtain, etc.," one man even asking for "a complete record of all the best of apples, and especially for those suited to Tennessee."

All such inquiries, we think, should be addressed to the editor of the journal from whence they have sprung, and he will see to their being answered; or letters may be addressed to writers and sent to the care of the editor of the journal in which their articles appeared, when they will of course be duly forwarded.]

MONMOUTH, *April* 14, 1868.

MR. EDITOR—*Dear Sir:* I feel inclined to say a few words to some of the contributors to the columns of the HORTICULTURIST, and to request them to be a little more specific in their descriptions of certain processes which they describe. For instance, at the meeting of the Lake Shore Grape-Growers' Society, as given in a late number of the HORTICULTURIST, it is said: "Mr. Saxton had kept his grapes in a cool room—in a dry cellar," etc. They kept well, and would have kept until April.

Now, the way to do this is what I greatly desire to know. But he has given us no directions about packing them, or how to protect them from freezing in a cold room in winter. From all that is said on the subject by the different members of the Society, I am unable to understand how to do it. I confess I am a novice in the business, and I read the papers and periodicals to learn how to do properly everything connected with grape-growing. And when I read the communications of men who know all about it, and they fail to give all the manipulations necessary to success by a beginner, I feel disappointed, and throw down the paper with disgust. A year or so ago, Mr. Griffith, of Penn., told us of his wonderful success in growing the Delaware and other hard-wooded grapevines in the open air; but he failed to tell us how to do it. What benefit is it to the common, unlearned readers of your excellent paper to read of the great success of scientific men in fruit-growing, if they do not tell us common people how to do it? It is like presenting a loaf of bread to a starving man, yet placing it beyond his reach. I am delighted with the HORTICULTURIST, and with a little reform in the direction indicated above, my joy will be full. J. F.

PLANTING ROSES.—It may seem out of season to write of planting roses in June, but our experience in forming a bed of roses leads us to consider this month quite as desirable as any. Formerly, only the tender roses were grown in pots; and if hybrid perpetuals were wanted, it was necessary to procure them early in spring or in the autumn. Now, however, the large rose-growers keep a stock of all sorts grown in pots; and we have found that when planted out in this month, they grow vigorously from the first, and bloom well late into autumn.

The soil should be dug deep, say eighteen to twenty inches, and well intermixed with good rotten manure. Turf and bones are also good manure for roses. When the plants are turned out of the pots, if they are worked on manetti or any other roots, all suckers or sucker buds should be rubbed off, the drainage just removed; but otherwise the ball should be disturbed as little as possible, although when the earth has been pressed well to it, a slight pressure near the collar may be given just to insure the water passing through the fibers. After a good soaking of water, the ground around newly planted roses at this time should be well mulched, and for this purpose new-mown grass is one of the best materials. A watering of liquid manure once a week will cause the plants to make strong and healthy growth and produce abundant blooms.

Rearing Chickens.—A writer in the London *Cottage Gardener* gives the following excellent directions for rearing chickens, translated from M. Jacque's French work, "Le Poulailler."

When a hen takes to her nest she is the same evening removed from the yard to a (sitting) room, into which only a half light is admitted, and there kept on dummies for a few days until two or three hens are broody. I prefer three or more to two. They are placed in separate covered hampers 2 feet long and 1¼ foot wide, in which clean new hay has been spread. Each basket has attached to it a linen label bearing the date of sitting, the name of the hen, the number of eggs, with the date upon which chickens are due, thus—

> Betsy.—February 29.
> 14 Houdans,
> Due March 20.

also a clean piece of old flannel.

Every morning at the same hour each basket is opened in turn, the hen taken out and placed under a coop, being previously supplied abundantly with food, both soft and grain, and with clean water. Fifteen minutes, neither more nor less, are allowed for feeding. While the hen is off the nest the eggs should be kept covered with the piece of flannel, and having put all the sitting hens to feed, each nest should be visited in turn to ascertain that no casualties have occurred; and if any eggs have been broken, turn the rest out, put in clean hay, and cover up again as quickly as possible.

On the sixth day the hens should have an extra ten minutes allowed them, and should be given an opportunity of dusting themselves while the eggs are being examined for chickens, which is done by inclosing a lighted paraffine lamp in a box, in one side of which a hole about the size of an egg has been made. To this hole each egg is applied in turn, and returned to the nest or rejected, as it proves to be barren or otherwise. This should be done in a dark room. When a great proportion of the eggs turn out barren, a complete sitting should be made up to one or two of the hens, and the rest kept upon dummies for a few days till a fresh set of hens is ready; hence the greater the number of hens put to sit on a given day the greater the convenience.

On the twenty-second day the baskets containing the hens and chickens are brought to the light, the chickens reckoned, and regularly distributed between the hens. Some bread crumbs for the chickens, and grain for the hen, are put in a saucer at one end of the basket, and the whole taken back to the half light till the twenty-third day, when they may be turned out where it is intended to rear them.

The above directions may seem complicated and unnecessary, but in practice will be found to facilitate the work, prevent many mishaps, and, consequently, increase the percentage of chickens, while the mothers will turn out with their broods much less exhausted, and consequently better fitted to take care of them, than if left to sit closely for several days, as many, and those the best sitters, frequently do, and then get up and stay off the nest for half an hour or an hour, which, if it happen to be a cold day, may spoil the eggs or make the chickens weakly.

Hardy Shrubs are readily propagated from cuttings of the present year's growth of wood. Plant them in a cold frame, and shade them the same as herbaceous cuttings.

Bedding Plants require special attention to pinching and pegging, for on this depends greatly the beauty of display as the plants come into bloom.

Early in June is a good time to sow annuals for fall blooming. Sown at this time they frequently do better than those sown earlier, because the ground being warm they grow right along without check.

EAST BETHLEHEM, PENN., *May 5th*, 1868.

F. W. WOODWARD, ESQ.—*Dear Sir:* Have you any experience in covering strawberries during winter with sorghum bagasse as winter protection? Or have you any letters from correspondents who have used it for this purpose? There is a large quantity of it here (in a heap) one and two years old, and I had thought of procuring it for this purpose, and spread it out into small heaps this spring, and turning it over once or twice during the summer to have it all exposed to the rains and action of the weather before putting it on the plants in December. It would not do, in my opinion, to put it on more than half an inch deep, as one inch would surely smother the plants. We can not use straw or fodder or stalks here as a covering on account of the field-mice working under them; but they rarely work under the bagasse. I have never found anything that would retain moisture like it; hence, if it is not injurious, it would be just the thing as a summer mulch. In the spring it could be moved from off the crown just as straw is done. What think you?

Yours, etc., JNO. H. JENKINS.

[We have witnessed the use of bagasse during the past two years on strawberries and among raspberries, etc. It packs very closely and retains moisture, and unless put on too thick answers well. There is an acid in it, but unless, as above said, it is spread thick, we can see no injury from its use. We should not advise its application until just before the strawberries commence to ripen, and then we would remove it early in September, and replace after the ground was thoroughly frozen, again removing it in spring from the opening thereof, until near fruiting time.]

TREE PEONIES.—We have repeatedly written of the wealth and beauty of leaves and flowers possessed by Moutan or tree peonies, and we now again desire to call the attention of every lover of flowers to an examination of their foliage and blossoms. We have found them to be perfectly hardy, and now that a variety of shades of color have been produced by new seedlings, a bed of them when in flower presents one of the grandest sights we have ever seen created by grouping or massing of flowering shrubs.

GORDON'S FLOWERING CURRANT—*Ribes Gordoniani*—is one of the prettiest and most showy of our very early and hardy shrubs. Its blossoms have been beautiful with us this year. It should be annually pruned back as soon as it has done blooming, otherwise it will soon grow out of shape; and besides by annual cutting back, it grows more vigorously; and as its flowers are all on the wood of the previous year's growth, the bloom is consequently more abundant.

NUMBER OF VARIETIES OF SMALL FRUITS NAMED AND DESCRIBED.—A glance which we have given at the number of varieties of small fruits now known, named, and described, counts up over *three hundred* of strawberries, about fifty currants, seventy raspberries, twenty blackberries, and nine of American gooseberries. The list of English gooseberries is almost beyond computation, and nearly all are valueless in this country.

GRASS LAWNS, newly made, must not be so closely mown as old turf; but mowing must be performed with regularity, or it is impossible to obtain a uniform velvety green surface. To mow close a well-established turf is to encourage the fine grasses and kill out the coarse kinds. Salt and plaster are good manures to sow at this time. Use at the rate of one bushel of plaster and three bushels of salt to the acre, and sow just before a rain.

INCREASING THE SIZE OF FRUIT.—While the fruit is swelling, the size of raspberries and strawberries may be increased by thinning out the number on a cane or plant, removing all suckers or newly-forming attached plants, and watering occasionally with manure water.

Hoe with the Rake.—This may be an Irishman's advice; but we have found great advantage in the use of an iron tooth rake or toothed hoe during the early cultivation of all garden crops. We go over our beets, parsneps, peas, beans, etc., with a twelve-tooth steel rake as soon as they show sign of coming above ground. For potatoes, corn, and for working among raspberries and other small fruits, and for stirring the surface earth around dwarf pears and recently planted trees, we use a four-pronged hook or hoe, with which a man will perform nearly or quite one sixth more work in a day, destroy the weeds, and leave the ground always light, loose, and even.

Keep the Surface of the Ground Loose.—We have many years watched the varied results of the cultivator who keeps frequently stirring the surface of his soil, and the one who hoes or cultivates only when the weeds compel him to the work; and as we have watched and recorded our notes, the result has always been in favor of the constant stirring of the surface soil. We do not advocate deep tillage during the growing season, but we would have the ground deeply and thoroughly stirred early in the season, whether it were an old or new plantation. Once, however, that vigorous growth of top and root has commenced, all deep tillage should cease, because, by pursuing it, constant and continued checks are given, and a truly healthy growth prevented by repeated breaking and tearing asunder the roots and fibers, the supplying pipes for elongation, expansion, and evaporation of the branches and leaves. By repeated surface stirring of the soil, however, no roots are broken; the sun, air, and moisture are enabled to penetrate and assist in the chemical transmutation of the earth's compounds and fitting them for absorption by the roots.

Saw-Tooth Cultivator.—One of our correspondents writes, he is having a cultivator made, with the edge of the teeth made notched like the teeth or knives of a mowing machine, except that they are sharpened all from the under side. By this, he says, he feels confident he can always be sure of cutting all the weeds without regard to their size, an item that ordinary cultivators fail to perform.

Experiment in Wine-Making.—Capt. John Spalding, near Cleveland, O., sends us two bottles of wine made from the refuse grapes of his nine acres of vineyard last fall. His course was to mash the grapes and leave them about twenty-four hours on the skins; then, after testing the weight of the must, he added grape sugar dissolved sufficient to bring up the saccharometer test to 90°, and then let the whole ferment a day or two on the skins; after which it was pressed and put into the cask, and is now a dark-colored, heavy-bodied liquid, without much of the grape aroma, and with considerable harshness, but yet far superior to many of the so-called wines sold. An experiment was made with some of the wine by bottling it, and then putting the bottles into water and gradually bringing the heat up to, "he says," 180°, and then corking tight. The wine so heated is more mild, but has a dead character, without any decided flavor, which *we* do not like, but may possibly by some be admired. It will doubtless keep longer than that in which the qualities of the grape are yet more distinct; but at the expiration of time, say two years, we do not think it will be as good.

Asparagus should not be cut too late in the season, or its value another year will be lessened. A dressing of well-rotted manure lightly forked in should now be given the bed.

Bush and Pyramid Trees, under the common name of dwarfs, should be carefully watched and pinched back from time to time, if any special form is desired to be retained.

IMPROVEMENT OF PUBLIC STREETS.—The correct arrangement of the suburban streets of our large cities, as well as those of country villages, appears to us as demanding more of thought and attention than has thus far been devoted to it. As a rule, no definite line has ever been marked on the first opening of a street or road, except, possibly, that of the civil engineer to designate the line of drainage according to the elevation. No thought has been taken as to just how much breadth of road was actually necessary to accommodate the public travel, or how the depression or elevation of the road-bed would tend to improve or deteriorate the value of the abutting property. Street trees are yearly planted, but with little thought of the best position for their permanent results in giving shade to the traveler, character to the street, and harmony of association with the grounds or lots adjoining. At the suggestion of one of our subscribers we shall endeavor to give this subject a careful examination during our visits to different cities and towns this coming summer, and publish our views thereon in the autumn. Meantime, we shall be much obliged for any suggestions from private parties, and would ask of our editors of papers devoted to the improvement of all matters of rural life, to bring up the subject to their readers and ask for suggestions. Some of the points we desire to have more carefully observed in establishing the grade, etc., of a street, are: first, the width that is necessary for a road-bed for carriage travel; second, the elevation of that road-bed as connected with the natural grade of the land adjoining the road; third, the distance at which shade trees should stand from the boundary side of the street and also from each other.

KIRKWOOD, Mo., *May* 11, 1868.

MR. EDITOR: Advertisements of poultry, especially of Brahmas, often mention "pea comb" as a desirable form for the crest of that variety of fowls.

I have been frequently asked, "What is the difference between pea combs and rose combs?" I confess my inability to give a satisfactory reply.

A short paragraph defining the precise meaning of these terms and describing the forms of "pea" and "rose" combs would no doubt contain information which would be valuable to many of your readers.

C. W. S.

Answer.—Pea comb—low in front and firm on the head, without falling over to either side, distinctly divided so as to have the appearance of three small combs joined together in the lower part and back, the largest in the middle, each part slightly serrated. Rose or double comb—square in front, fitting close and straight on the head, without inclining to either side, no hollow in the center, uniform on each side, the top covered over with small points, with a prominent point behind.

GREENHOUSE AND CONSERVATORY PLANTS that require to be placed out in the open air to complete their growth and ripen their wood, may often be made to highly decorate some bank, corner, or odd place about the premises, instead of hiding them away back of the sheds or outhouses.

TOMATOES will bear more abundantly, and occasion the least trouble, if the ends of the shoots, just beyond the fruit, are pinched off. A surface mulch of rotten manure, and if a dry time, frequent watering, well repay in increased size and abundance of fruit.

HERBACEOUS PLANTS, as soon as they have done flowering, may be easily propagated by cuttings. These should be planted in a cold frame in a mixture of sand and loam, and kept shaded until roots have formed.

FUCHSIAS should be shaded from the mid-day sun. It is a good time now to make cuttings and propagate.

Transplanting of annuals, tomatoes, cabbage, etc., should never be done when the ground is wet. It is also a bad practice to puddle the roots, that is, to wet and so mud the roots by dipping them in a pail of mud as to cause them to adhere together. Our most successful practice in transplanting is to plant in the dry ground, when the earth pulverizes fine like meal; sift the earth among the roots until the hole is half filled with earth; then fill the hole with water, and as soon as it has soaked away, draw in dry soil to finish and level the surface.

BOOK NOTICES.

Darwin's Great Work.—The Variation of Animals and Plants Under Domestication. By Charles Darwin. Authorized edition, with a Preface to the American edition by the Author, and one by Professor Asa Gray, of Cambridge, Mass. New York: Orange Judd & Co.

This is the republication of an English edition of a work the value whereof it is difficult to estimate in words sufficiently expressive.

The first English edition, it is said, was exhausted in a week, and the publishers of this, awake to the wants of the American people, secured the author's revision, with new and additional notes, making it the most complete as well as the most remarkable collection of facts concerning our domestic animals and plants yet brought together. Written in admirable English, using no scientific terms but such as are comprehensible to men of fair education, lucidly arranged, and indexed with scrupulous care, there is not an agriculturist or horticulturist in the country who has any taste for the history or theory of his calling but will peruse it with pleasure and profit, and find it difficult to say whether he values it more as a storehouse of facts or as an incitement to observe and to think.

Let the reader be of the learned professions, or a child or novice in all that pertains to natural history, they will find in this book food for thought and instruction, knowledge of animal and vegetable life, their origin and perpetuation in a healthy or unhealthy condition, and so mingled with anecdotes, observations, and originality, that its study will be a pleasure to every intelligent mind.

The work is finely illustrated, and published in two volumes of over 500 pages each. Price, $6.

The Book of Evergreens. A Practical Treatise on the Coniferæ, or Cone-bearing Plants. By Josiah Hoopes.

Messrs. Orange Judd & Co., publishers, Broadway, New York, have just issued a book with the above title, which we take great pleasure in commending as the labor of a scientific and practical cultivator.

The subject is one of interest to all classes, inasmuch as evergreens play a very important part in the decoration of our homes and in the shielding of them, as well as our orchards, from harsh, cold winds and storms. In both popular and scientific language the author describes the many species, and treats practically of their propagation, their hardihood, etc., in such a manner as can not fail to make the work a necessity to every planter. Botanically, we have long felt the want of just such a work as is here presented, and are thankful to the author for the care he has evidently taken in striving to arrive at correct names. The book is gotten up in the usual good style of its publishers; is abundantly illustrated with engravings, executed in a very superior manner, and can not fail to take its appropriate place as a standard of authority on evergreens for this country. Price, $3.

ACKNOWLEDGMENTS.

Our thanks are due to John Saul, Esq., of Washington, D. C., for a fine collection of the newer varieties of geraniums, fuchsias, chrysanthemums, etc., all in fine condition.

Also to Peter Henderson, Esq., of 67 Nassau Street, for like favors.